National Low-Level/Mixed Low-Level Waste Disposition Strategy

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Site Specific Advisory Board Chairs Meeting
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Discussion Outline

- LLW/MLLW Programmatic Update
  - Complex-wide
  - Site highlights
- National LLW/MLLW Disposition Strategy
  - Calls to Action
  - Overview of Approach
  - Accomplishments and Next Steps

Low-Level Waste Program Update – Complex-wide

- Record volumes of LLW/MLLW disposed in FY 2005
  - LLW to NTS
  - LLW/MLLW (<10nCi/g) to Envirocare
  - Lesser volumes to LANL, Barnwell, Ecology
- Most “legacy waste” inventories disposed
- Large volume “orphans” resolved
- Off-site shipments to Hanford remain suspended pending legal ruling(s)
- Path forward identified for regional MLLW disposal operations at Nevada Test Site (NTS) in FY 2006
  - Pending Nevada State approval of site’s RCRA permit renewal
  - Accelerated closure of Mixed Waste Disposal Unit

Low-Level Waste Program Update – Complex-wide

- Commercial processors becoming NTS certified
- Limited volumes of LLW/MLLW placed in short-term interim storage
- Use of rail transport increased
- Extension of TSCA Incinerator planned
- 1st joint DOE-DOD conference "FEDRAD" held
  - DOE workshops on orphan waste streams and data needs
- Greater than Class C (GTCC) Disposal EIS initiated
- Commercial disposal licenses and changes in development
- GAO reviewed LLW disposal costs; Congress directed report
- Corporate life-cycle waste data collection resumed

Low-Level Waste Program Update – Site Highlights

- **Rocky Flats**
  - Higher activity MLLW "orphan" resolved
  - Site Treatment Plan closed
  - Approximately 3 trains of waste remain
- **Fernald**
  - Waste pits completed!
  - Silo 3 residues being treated and disposed
  - Silo 1 & 2 treatment facility attaining steady state
    - Shipped for interim storage
    - Commercial disposal license expected mid FY 2006
  - Increased off-site disposal to optimize schedule
- **Mound**
  - Significant increases in waste volumes
  - Over 1.2M cubic feet to be disposed in next six months
- **Columbus**
  - Waste volumes greater than expected, but work-arounds identified
  - Low activity debris transferred/released to landfill disposal
  - Most orphans resolved through federal/commercial partnering

Low-Level Waste Program Update – Site Highlights

- **Ashtabula**
  - ID/IQ contract to be awarded soon; includes significant waste volumes
- ***Brookhaven***
  - Banner year for disposal – shipped 3x more waste than FY 2004
  - Completed Peconic River sediment removal project
  - Identified alternative disposal sites for LLW/MLLW
  - Resolved small volumes orphans (Janus Plantes, radium sources)
- **West Valley**
  - Published Waste Management ROD and resumed higher activity waste disposal
  - Rail shipments to begin FY 2006
- **Oak Ridge -ETTP**
  - Disposed nearly all legacy wastes consistent with contract goals
  - Completed comprehensive MACT performance test at TSCA Incinerator
    - Decisions pending on continued operations
- **Idaho**
  - Great progress in MLLW treatment
  - New contract in place and new baseline under review

Low-Level Waste Program Update – Site Highlights

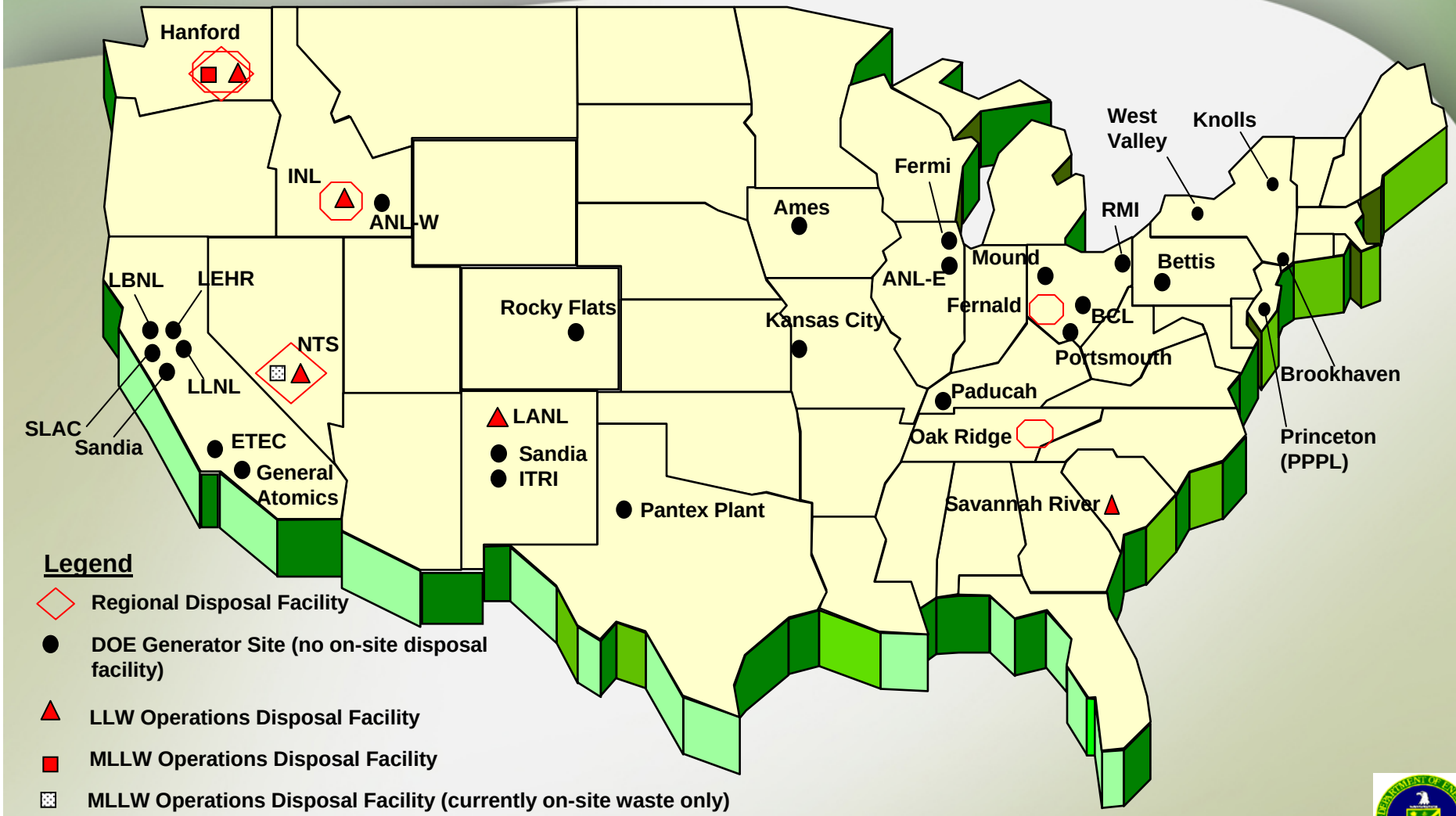
- **Savannah River**
  - Completed treatment of depleted uryl-nitrate tanks
  - Waste determinations under review by NRC
- **Richland**
  - Construction of Integrated Disposal Facility continues
  - Increased use of Environmental Restoration Disposal Facility for on-site wastes
  - Revised acceptance criteria to reflect approved de-listing petition
- **Portsmouth**
  - New remediation contract in place, disposal activity increasing
  - Significant volumes require treatment at TSCA Incinerator
- **Paducah**
  - NTS certification restored and shipment resumed
  - Redirected NW Scrap Pile to commercial disposal
    - Envirocare on site supporting packaging and waste preparation
  - New remediation contract still pending
- **Moab**
  - Published Final EIS and ROD – Tailings pile to removed and disposed

Low-Level Waste Program Update – Site Highlights

- ***Nevada Test Site***
  - Record LLW volumes received
  - Absolutely critical to continued EM cleanup and DOE missions
  - Completed self-reviews to improve operations and optimize

- ***Other DOE Sites***
  - **LANL –** Increasing integration with other sites and agencies
  - **National Labs** – Finding alternate disposal sites to maintain progress

DOE's LLW/MLLW Waste Disposal Facility Configuration



Legend

- Regional Disposal Facility
- DOE Generator Site (no on-site disposal facility)
- LLW Operations Disposal Facility
- MLLW Operations Disposal Facility
- MLLW Operations Disposal Facility (currently on-site waste only)
- CERCLA Disposal Facility

Office of Environmental Management

Safe for the Workers, Protective of the Environment, and Respectful of the Taxpayer

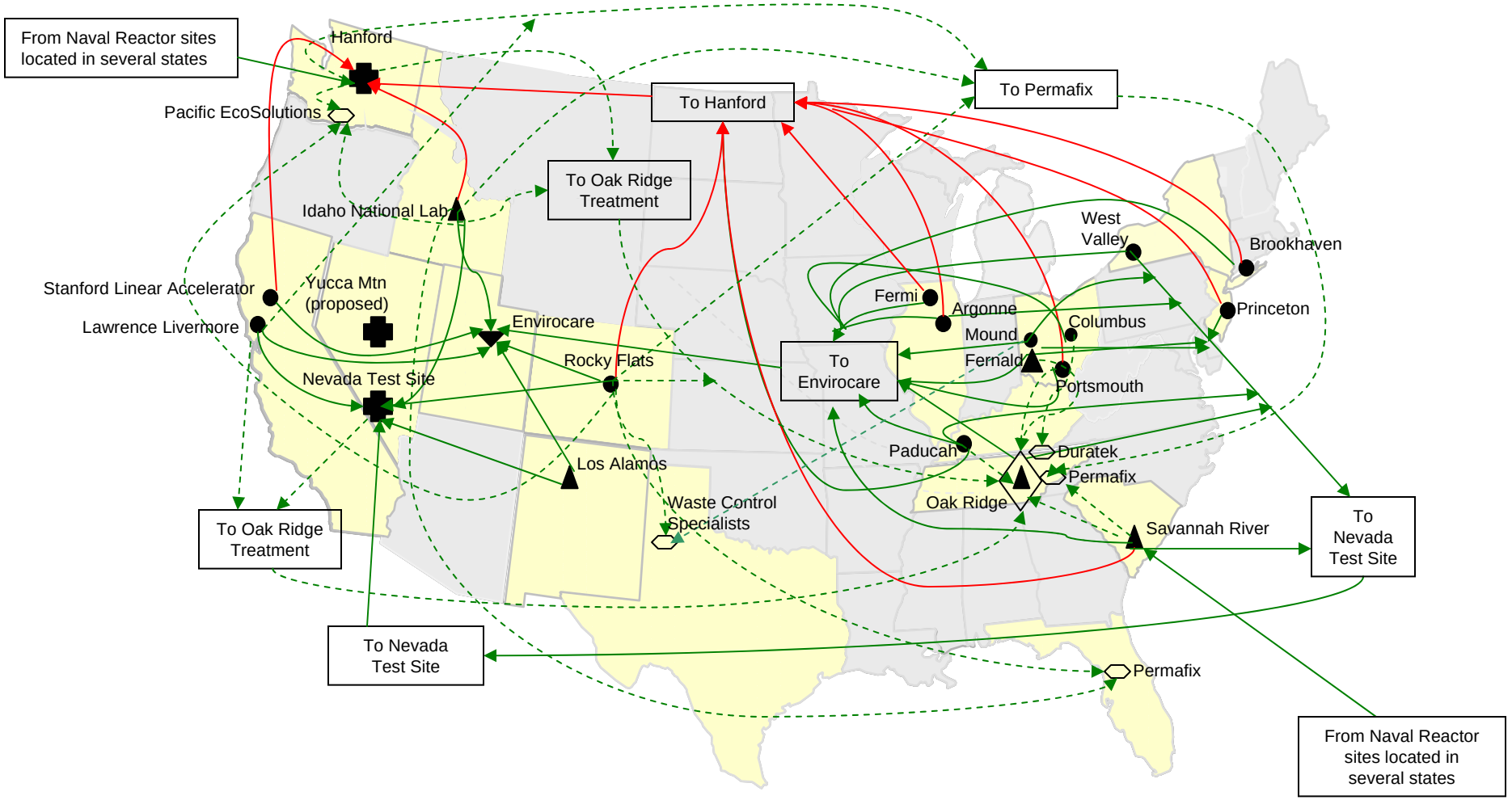
Use of commercial capabilities allows optimization of resources and supports acceleration efforts

- Treatment and packaging
- Certification to disposal criteria
- Interim storage
- Disposal
- Transfer for future release and disposal
- Support for accelerated site closure

In many cases, the resolution of waste issue requires cooperation among multiple vendors and sites

Major LLW/MLLW Waste Transfers (includes commercial facilities)

Shipment lines do not portray actual transportation routes. This map is not inclusive of all past or planned shipments.



◇ DOE Offsite Radioactive Waste Treatment Facility

● DOE Generator Site (no on-site disposal facility)

▲ DOE Onsite Radioactive Waste Disposal Facility

⬡ Commercial Radioactive Waste Treatment Facility

▼ Commercial Radioactive Waste Disposal Facility (Note: Envirocare also treats waste)

Low-Level Waste/Mixed Low-Level Waste Disposal Shipment

Suspended ow-Level Waste/Mixed Low-Level Waste Disposal Shipment

Low-Level Waste/Mixed Low-Level Waste Treatment Shipment

LLW/MLLW Issues

- Disposal volumes will decrease in FY 2006
  - "Tough stuff remains"
- Disposal capacity for higher activity MLLW is limited
- Classified MLLW treatment and disposal challenges
- Continued operation of TSCA Incinerator
- Waste issues are the critical path for most closure sites
- *GAO identified concerns on guidance and oversight of LLW management*
- Opportunities exist to better integrate commercial contracts
- Policy issues pending related to Texas Compact Facility
- Need to preserve balance between Federal and commercial markets

GTCC EIS Overview

- Low-Level Radioactive Waste Policy Act assigns DOE statutory responsibilities for GTCC disposition
- Energy Policy Act of 2005 includes new provisions on GTCC radioactive waste
  - Cost and schedule plan to Congress for completion of EIS and record of decision due within 1 year (EM lead)
  - Report to Congress on recommendation and alternatives for disposal before final decision
  - Await action by Congress on report before decision
  - Short-term plan for continued recovery and storage of sources (NNSA lead)
- Advance Notice of Intent published – May 2005
  - Comments received and under review
- Requested commercial expressions of interest
  - Three received
- Notice of Intent to be published by end of CY 2005

EM planning has evolved

- **Site Roadmaps/ 5-Year Plans**
- **Baseline EM Reports**
- **FFCAct Implementation**
- **Paths-to-Closure**
- **EM Integration**
- **Top-to-Bottom Review**
- **Lifecycle Site/Project Baselines**
- **National Disposition Strategies**

1990

Today

National LLW/MLLW Disposition Strategy

"The whole is greater than the sum of its parts."

Calls to Action

- Dec 2003 – EM Reorganization mission statements
  - EM Headquarters to develop "national business cases" based on comprehensive cost-benefit analyses and that recommend the most efficient and effective disposition solutions
- Nov 2004 – SSAB Chairs' proposal to EM
  - "Sponsor a national forum to produce technical sound, fiscally responsible, politically acceptable, sustainable and comprehensive solutions to DOE's system-wide waste and material disposition challenges"
- June 2005 – Western Governors Association Resolution 05-23
  - "Define an integrated cleanup plan which equitably addresses the cleanup and disposition needs of the site with the cumulative impact on states with treatment, storage and disposal facilities"
  - "Integrate sites into a national program rather than serve as the coordinating agent for autonomously operated sites"
- Aug 2005 – Appropriation Committees
  - Requested waste and material disposition maps be included within the Five-Year Plans submitted with FY 2007 Congressional Request
- Continuous – Market influences

"Requirements" of the National Strategies

- Values
- Principles
- Common sense
- Priority setting criteria
- Define issues and barriers
- Address current and future wastes
- Recommend solutions
- Define resolution process

* Technically sound
* Fiscally responsible
* Sustainable
* Politically acceptable
* Inclusive

- Minimize worker exposure
- Minimize waste handlings and transfers
- Compliant, risk-based disposal
- Minimize waste volumes and packaging
- Optimize transportation
- Economies of scale
- Opportunities for cost and schedule efficiencies
- Gap analysis
- Risk assessment
- Contingency plans
- Formal and manageable

* Credibility

Rely on basic project management theory

- Document the scope, schedule and cost of waste disposition efforts
- Design effort to meet defined needs
  - We need NOT duplicate existing efforts
- Provide discipline, formality and structure

- **But**, control complexity and avoid rigidity

Cleanup projects require flexibility.

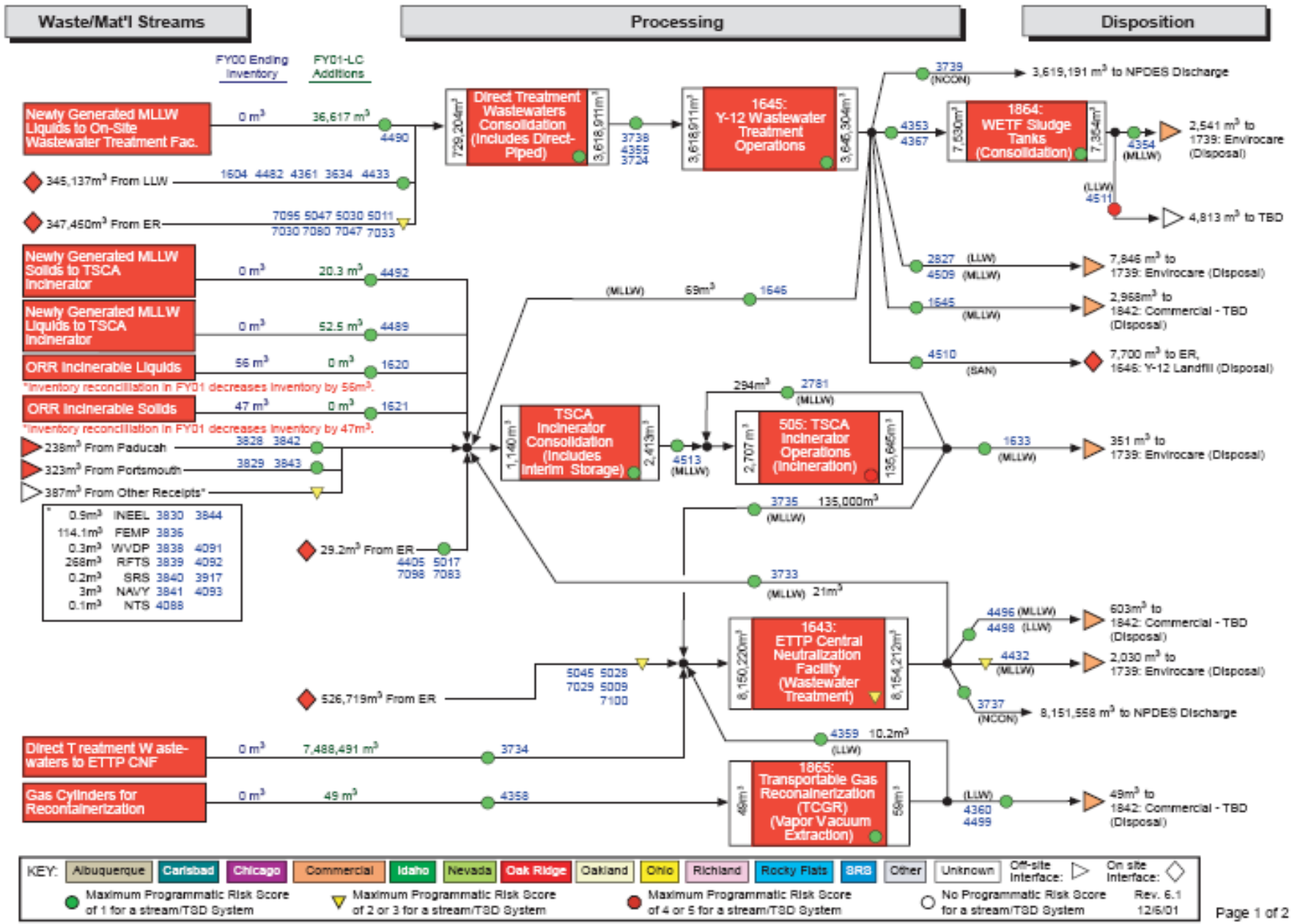
The waste management system must be agile and able to respond to sudden changes and dynamic circumstances.

Dataset: IPABS-IS (9/27/01)

PREDECISIONAL DRAFT

This map is conceptual and in many cases does not represent cleanup or transfer decisions; this map does not preclude the ongoing regulatory and stakeholder decision-making processes.

Oak Ridge MLLW Disposition Map



What went wrong with the last corporate waste system?

- "One shoe-sized to fit all"
- Many, many data requirements
- Data suppliers often not project managers
- Extensive work for "stop lights"/risk scores
- Expensive and time consuming to manage
- Streams split between budget accounts (PBSs)
- Rollup of waste stream data to a level not useful by the site project managers

We are taking great pains to avoid these mistakes.

What went well?

- Disposition maps and flow diagrams - liked by stakeholders
- Inventory and lifecycle waste forecast
- Reconciled disconnects between shipping and receiving sites
- Consistent format and approach
- Electronic data transfer
- Used for program decisions (WM PEIS)

What we have done…

- Documented our "mission need"
  - Reviewed previous efforts and solicited input
- Designed our approach
  - First, define scope – waste data and site baseline plan
  - Second, develop schedule – site schedules and integrated schedule
  - Then, conduct analysis of cost and risk
  - And, develop contingency and optimization plans
- Conducted FEDRAD – May 2005
  - Discussed sites waste challenges
  - Began design of new data system
  - Distributed initial narrative summary of the National LLW/MLLW Disposition Strategy document
- Developed the "waste breakdown structure" to define level of detail needed

What we have done…

- Conducted data workshop – Aug 2005
  - Requirements document sent to field
  - Data call in October; due in November
- Designed platform for new waste disposition map
  - Waste Information Management System (WIMS)
  - http://wimsweb.hcet.fiu.edu/wims

…and what we have left to do

- Analyze new data and produce disposition maps
  - High-level maps for FY 2007 Budget Request
  - Web-based maps in "WIMS"
- Complete schedule development and conduct gap analysis
  - Phase 1: Hanford, Savannah River, Idaho, Fernald, Mound, Paducah and Portsmouth
  - Phase 2: Balance of EM work scope
- Complete policy analysis
  - Review existing guidance
- Conduct risk assessment and develop contingency plans
- Develop methodology for cost analysis
- Incorporate comments to Draft National Strategy summary
- Conduct formal review of 1st National LLW/MLLW Disposition Strategy